

gas or gas mixture is employed, it may be under pressure, preferably in a range of 1-20 atm. If a solid is employed it is preferably a solidified noble gas.

The paragraph beginning on page 7, line 30 and ending on page 8, line 6, has been amended as follows:

Cathodes 13, 37 and anode 35 are held, during use, at selected electric potentials by means of an electrical power supply device (not illustrated). Preferably, anode 35 is grounded and cathodes 13, 37 are held at respective selected electrical potentials such that a weak electrical field, called drift field, is obtained substantially between cathode 13 and cathode 37 and a strong electrical field, called avalanche multiplication field, is obtained between cathode 37 and anode 35, and possibly around cathode 37.

The paragraph beginning on page 11, line 10, has been amended as follows:

At avalanche cathode 37 the electrons begin to be accelerated due to the stronger electrical field experienced and they interact with the substance, causing further electron-ion pairs to be produced. Those produced electrons will also be accelerated in the field, and will interact repetitively with new material, causing yet further electron-ion pairs to be produced. This process continues during the travel of the electrons in the avalanche region towards anode 35 located at the bottom of the avalanche region, and in such manner electron avalanches are formed.